

APPENDIX D

Acoustical Site Assessment

FINAL ACOUSTICAL SITE ASSESSMENT
PEACEFUL VALLEY RANCH RESIDENTIAL DEVELOPMENT
TM 5341RPL5, GPA 03-05, R03-015, MUP 04-048, LOG NO. 04-19-007

Submitted to:

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ISE Project #04-030

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INTRODUCTION AND DEFINITIONS

Existing Site Characterization

The project site consists of approximately 181 acres located in the town of Jamul within the unincorporated area of the County of San Diego as can be seen in Figure 1 below. The project area and surrounding community consists of mostly vacant lands and rural residential and equestrian uses. The project site is bordered by Campo Road (SR 94) to the west with onsite access via Peaceful Valley Ranch Road (currently a dirt road). SR 94 currently provides regional access to the project area.



FIGURE 1: Project Vicinity Map (ISE 11/06)

The project site currently consists of mostly undeveloped agricultural land with some existing dwellings on site. The proposed project site has a zoning use regulation of A-72 (General Agricultural) with a minimum lot size of two acres on the west side and eight acres on the east side. Topographically, the project site consists of hillside terrains with elevations on the entire property ranging from approximately 828 to 1,108 feet above mean sea level (MSL) as can be seen in Figure 2 below.

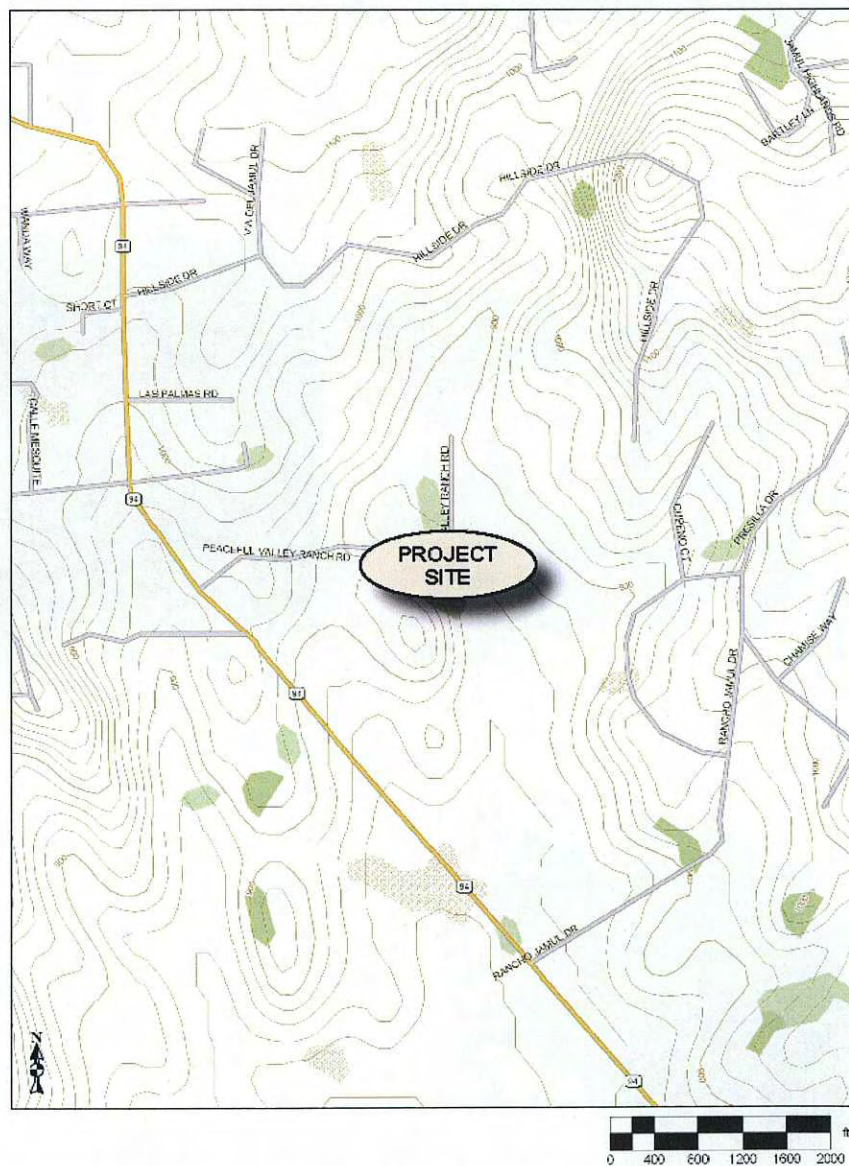


FIGURE 2: Project Site Map with Topography (ISE 11/06)

Project Description

The Peaceful Valley Ranch project proposes the subdivision of 181.31-acres for an estate residential development, equestrian uses and amenities, and fire service facilities. The development plan includes a total of 57 lots consisting of:

- One estate residential lot of 4.0-acres for the existing Ranch House (Lot 5)
- 46 new estate residential lots ranging in size from a minimum of 2-acres up to approximately 7.7-acres (Lots 1 through 4 and 6 through 47);
- One 6.7-acre equestrian facility lot (Lot 48);
- One 3.7-acre lot reserved for a new joint-use fire station and administrative offices of the San Diego Rural Fire Protection District (RFPD) and U.S. Fish and Wildlife Service (USFWS) (Lot 49);
- One 3.7-acre open space lot for the protection of biological resources (Lot 50);
- One 28.9-acre private horse stable and polo training facility (Lot 51); and,
- Six private roadway lots (Lots 52-57).

The project also includes a General Plan Amendment (GPA) and rezone to amend the existing land use designation of the easterly 152.4-acres of the 181.31-acre property from (18) Multiple Rural Use (1 du/4,8,20 ac) with an A72 (8) General Agriculture zone, to the (17) Estate Residential (1 du/2, 4 ac) designation with an A72 (2) General Agriculture zone. The General Plan Amendment covers APN's 597-050-13, 597-070-02, and 597-070-07. The GPA request also seeks removal of a segment of a County of San Diego Circulation Element Road, SC 760, a portion of which is currently aligned through the project site. SC 760 is a planned two-lane Light Collector Road. The segment of SC 760 proposed for removal with the project extends from SR 94 north to Olive Vista Drive.

In addition, Lot 49, approximately 3.7-acres, is proposed for joint use by the Rural Fire Protection District (RFPD) and the United States Fish and Wildlife Service (USFWS) as a future site for relocation of a community fire station and administrative offices. The RFPD currently leases the existing fire station, which is located across SR-94 and currently houses six full-time fire fighters. The current lease is nearing expiration. Peaceful Valley Ranch will provide a convenient site at which to relocate area fire protection services.

The public equestrian facility proposed on Lot 48 will include stables, an exercise arena, hot walker, bullpen, hay barn, manure storage area; office area (approximately 200 square feet) and restrooms, caretaker residence and parking. The private equestrian uses are proposed on Lot 51 (30.8 acres). Lot 51 will include: a regulation size polo field (turf cover), stables, exercise arena, bullpen, hot walkers, hay barn for feed storage, manure storage area, office, restrooms, caretaker residence and parking. The current site development plan is shown in Figure 3 on the following page.

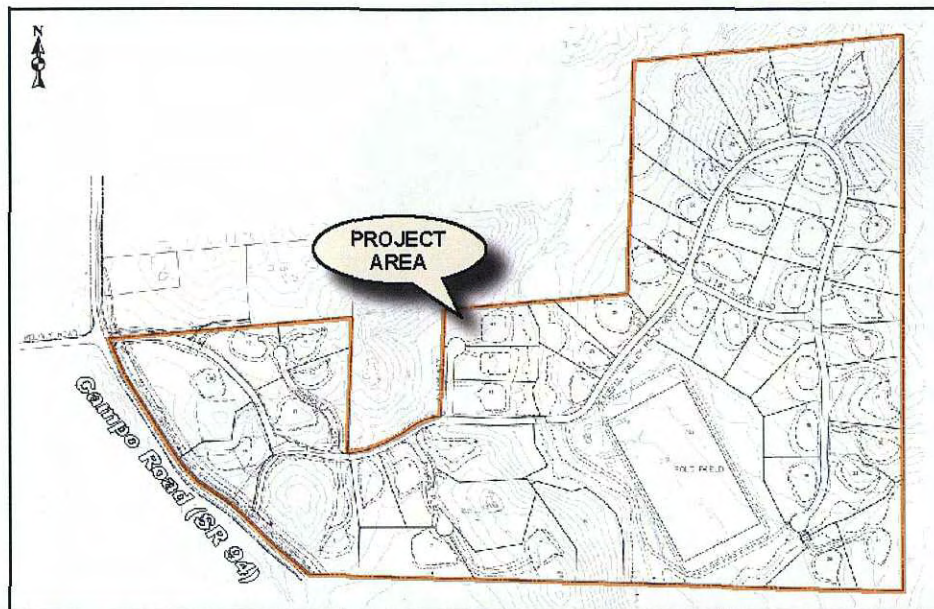


FIGURE 3: Proposed Peaceful Valley Ranch Site Plan (RBF Consultants Inc. 7/06)

In addition to the daily use activities, the project also includes a Major Use Permit to allow and regulate *"Participant Sports and Recreation Activities"* on Lot 51 as described herein. This equestrian participant sport and recreational play is anticipated to be on a "by-invitation" basis only. This type of formal participant sport and recreation activity, consisting of organized polo matches, will be controlled by the facility operator, and will be a permitted use subject to the conditions and regulations of a Major Use Permit to be issued by the County as included in the current project application. Such polo matches would be held primarily for the casual recreation of the horse owners, but could also be utilized by riders as a method to assess the quality and training of the polo horses themselves.

Eight riders, with four riders from each team, play a polo match. Typically there are two mounted referees for a match. Each team will typically consist of from four to six team members, including substitute riders. The matches would generally involve the participants, referees, and, potentially, the invitees and guests of the participants as spectators. As the matches are by invitation only, the matches will not be advertised or open to the general public. It is envisioned that matches would be scheduled for weekend and holiday play, potentially from 9:00 am until dusk. Matches would not occur more frequently than twice per month, conditions and weather permitting, nor more than twelve times per year. The matches will not include league play, nor organized multi-team tournament play.

The use of announcer loudspeakers will not be employed for normal matches, but may be used at one or two special matches per year. In order to avoid any potential for exceeding the standards and requirements of the County Noise Ordinance,

conditions of the Lot 51 MUP will stipulate that the use of loudspeakers would be limited to the hours from 9:00am to 7:00pm.

Finally, the private equestrian facility (Lot 51) will operate for daily rider use seven days a week. Most daily use activities will occur from dawn until dusk. However, typical horse care activities by the facility operator, staff, and/or horse owners or veterinarians, such as grooming, exercise and veterinary work, may occur daily from predawn until after dusk. However, in order to avoid any potential for exceeding the standards and requirements of the County Noise Ordinance, conditions of the Lot 51 MUP will stipulate that all mechanized maintenance activities, including polo field mowing, will be limited to the hours of 7:00 am to 7:00 pm daily.

Acoustical Definitions

Sound waves are linear mechanical waves. They can be propagated in solids, liquids, and gases. The material transmitting such a wave oscillates in the direction of propagation of the wave itself. Sound waves originate from some sort of vibrating surface. Whether this surface is the vibrating string of a violin or a person's vocal cords, a vibrating column of air from an organ or clarinet, or a vibrating panel from a loudspeaker, drum, or aircraft, the sound waves generated are all similar. All of these vibrating elements alternately compress the surrounding air during forward motion and expand it on the backward movement.

There is a large range of frequencies within which linear waves can be generated, sound waves being confined to the frequency range that can stimulate the auditory organs to the sensation of hearing. For humans this range is from about 20 Hertz (Hz or cycles per second) to about 20,000 Hz. The air transmits these frequency disturbances outward from the source of the wave. Sound waves, if unimpeded, will spread out in all directions from a source. Upon entering the auditory organs, these waves produce the sensation of sound. Waveforms that are approximately periodic or consist of a small number of periodic components can give rise to a pleasant sensation (assuming the intensity is not too high), for example, as in a musical composition. Noise, on the other hand, can be represented as a superposition of periodic waves with a large number of components.

Noise is generally defined as unwanted or annoying sound that is typically associated with human activity and which interferes with or disrupts normal activities. Although exposure to high noise levels has been demonstrated to cause hearing loss, the principal human response to environmental noise is annoyance. The response of individuals to similar noise events is diverse and influenced by the type of noise, the perceived importance of the noise and its appropriateness in the setting, the time of day, and the sensitivity of the individual hearing the sound.

Airborne sound is a rapid fluctuation of air pressure above and below atmospheric levels. The loudest sounds that the human ear can hear comfortably are approximately one trillion (or 1×10^{12}) times the acoustic energy that the ear can barely detect. Because of this vast range, any attempt to represent the acoustic intensity of a

particular sound on a linear scale becomes unwieldy. As a result, a logarithmic ratio originally conceived for radio work known as the decibel (dB) is commonly employed.

A sound level of zero "0" dB is scaled such that it is defined as the threshold of human hearing and would be barely audible to a human of normal hearing under extremely quiet listening conditions. Such conditions can only be generated in anechoic or "dead rooms". Typically, the quietest environmental conditions (extreme rural areas with extensive shielding) yield sound levels of approximately 20 dB. Normal speech has a sound level of approximately 60 dB. Sound levels above 120 dB roughly correspond to the threshold of pain and would be associated with sources such as jet engine noise or pneumatic equipment.

The minimum change in sound level that the human ear can detect is approximately 3 dB. A change in sound level of 10 dB is usually perceived by the average person as a doubling (or halving) of the sounds loudness. A change in sound level of 10 dB actually represents an approximate 90 percent change in the sound intensity, but only about a 50 percent change in the perceived loudness. This is due to the nonlinear response of the human ear to sound.

As mentioned above, most of the sounds we hear in the environment do not consist of a single frequency, but rather a broad band of frequencies differing in sound level. The intensities of each frequency add to generate the sound we hear. The method commonly used to quantify environmental sounds consists of determining all of the frequencies of a sound according to a weighting system that reflects the nonlinear response characteristics of the human ear. This is called "A" weighting, and the decibel level measured is called the A-weighted sound level (or dBA). In practice, the level of a noise source is conveniently measured using a sound level meter that includes a filter corresponding to the dBA curve.

Although the A-weighted sound level may adequately indicate the level of environmental noise at any instant in time, community noise levels vary continuously. Most environmental noise includes a conglomeration of sounds from distant sources that create a relatively steady background noise in which no particular source is identifiable. For this type of noise, a single descriptor called the Leq (or equivalent sound level) is used. Leq is the energy-mean A-weighted sound level during a measured time interval. It is the 'equivalent' constant sound level that would have to be produced by a given source to equal the average of the fluctuating level measured. For most acoustical studies, the study interval is generally taken as one-hour and is abbreviated *Leq-h*; however, other time intervals are utilized depending on the jurisdictional preference.

To describe the time-varying character of environmental noise, the statistical noise descriptors L10, L50, and L90 are commonly used. They are the noise levels equaled or exceeded during 10 percent, 50 percent, and 90 percent of a stated time. Sound levels associated with the L10 typically describe transient or short-term events, while levels associated with the L90 describe the steady state (or most prevalent) noise conditions. In addition, it is often desirable to know the acoustic range of the noise source being measured. This is accomplished through the maximum and minimum

measured sound level (Lmax and Lmin) indicators. The Lmin value obtained for a particular monitoring location is often called the *acoustic floor* for that location.

Finally, another sound measure employed by the State of California and the County of San Diego is known as the Community Noise Equivalence Level (CNEL) is defined as the "A" weighted average sound level for a 24-hour day. It is calculated by adding a 5-decibel penalty to sound levels in the evening (7:00 p.m. to 10:00 p.m.), and a 10-decibel penalty to sound levels in the night (10:00 p.m. to 7:00 a.m.) to compensate for the increased sensitivity to noise during the quieter evening and nighttime hours.



APPLICABLE SIGNIFICANCE CRITERIA

County of San Diego Construction Noise Impact Thresholds

The County of San Diego Noise Ordinance Section 36.410 governs construction noise emissions. The relevant parts are cited below.

- (a) It shall be unlawful for any person to operate construction equipment between the hours of 7 p.m. of any day and 7 a.m. of the following day.
- (b) It shall also be unlawful for any person to operate construction equipment on Sundays, and days appointed by the President, Governor, or the Board of Supervisors for a public fast, Thanksgiving, or holiday, but a person may operate construction equipment on the above-specified days between the hours of 10 a.m. and 5 p.m. at his residence or for the purpose of constructing a residence for himself, provided that the average sound level does not exceed 75 decibels during the period of operation and that the operation of construction equipment is not carried out for profit or livelihood
- (c) It shall also be unlawful to operate any construction equipment so as to cause at or beyond the property line of any property upon which a legal dwelling unit is located an average sound level greater than 75 decibels between the hours of 7 a.m. and 7 p.m.

County of San Diego Operational Noise Standards

The San Diego County Noise Ordinance Section 36.404 governs fixed source and/or operational noise. The applicable sound levels are a function of the time of day and the land use zone. Sound levels are measured at the boundary of the property containing the noise source. The relevant limits are given in Table 1 on the following page. In the case where two adjacent property lines differ in zoning, the applicable threshold would be the arithmetic average of the two standards.

The proposed residential development is zoned A-72 and is consistent with the surrounding residential land uses of the area. Thus, the operational noise standard would be 50.0 dBA Leq-h during the hours of 7 a.m. to 10 p.m. and 45.0 dBA Leq-h during the hours of 10 p.m. to 7 a.m.

TABLE 1: County of San Diego Noise Ordinance Limits

Land Use Zone	Time of Day	1-Hour Average Sound Level (dBA Leq)
R-S, R-D, R-R, R-MH, A-70, A-72, S-80, S-81, S-87, S-88, S-90, S-92, R-V, and R-U	7 a.m. to 10 p.m. 10 p.m. to 7 a.m.	50 45
R-R0, R-C, R-M, C-30, and S-86	7 a.m. to 10 p.m. 10 p.m. to 7 a.m.	55 50
S-94 and other commercial zones	7 a.m. to 10 p.m. 10 p.m. to 7 a.m.	60 55
M-50, M-52, and M-54	any time	70
S-82 and M-58	any time	70

Source: County of San Diego Noise Ordinance Section 36.404, 1981

Vehicular/Transportation Noise Impact Thresholds

Transportation noise levels, such as those produced by vehicles traveling to and from the project site, are governed under Policy 4b of the *County of San Diego's Noise Element of the County's General Plan (as revised 7/06)*. The relevant sections of the Noise Element are cited below:

Because exterior community noise equivalent levels (CNEL) above 60 decibels and/or interior CNEL above 45 decibels may have an adverse effect on public health and welfare, it is the policy of the County of San Diego that:

1. Whenever it appears that new *development* may result in any (existing or future) *noise sensitive land use* being subject to noise levels of CNEL equal to 60 *decibels (A)* or greater, an acoustical analysis shall be required.
2. If the acoustical analysis shows that noise levels at any *noise sensitive land use* will exceed CNEL equal to 60 decibels, modifications shall be made to the *development* which reduce the *exterior noise* level to less than CNEL of 60 *decibels (A)* and the *interior noise* level to less than CNEL of 45 *decibels (A)*¹.
3. If modifications are not made to the *development* in accordance with paragraph 2 above, the *development* shall not be approved unless a finding is made that there are specifically identified overriding social or economic considerations which warrant approval of the development without such modification; provided, however, if the acoustical study shows that sound levels for any noise sensitive land use will exceed a CNEL equal to 75

¹ **Action Program 4b1:** Recommend programs to soundproof buildings or redevelop areas where it is impossible to reduce existing source noise to acceptable levels.

Action Program 4b2: Study the feasibility of extending the application of Section 1092, California Administrative Code dealing with noise insulation standards to single-family dwellings, and incorporating higher standards for reduction of exterior noise intrusion into structures.

Action Program 4b3: Require present and projected noise level data to be included in *Environmental Impact Reports*. Designs to mitigate adverse noise impacts shall also be used.

decibels (A) even with such modifications, the *development* shall not be approved irrespective of such social or economic considerations.

Definitions, Notes and Exceptions

"*Decibels (A)*" refers to A-weighted sound levels as noted on page VIII-2 within the Element.

"*Development*" means any physical development including but not limited to residences, commercial, or industrial facilities, roads, civic buildings, hospitals, schools, airports, or similar facilities.

"*Exterior noise*":

- (a) For single family detached dwelling projects, "exterior noise" means noise measured at an outdoor living area which adjoins and is on the same lot as the dwelling, and which contains at least the following minimum area:
 - (i) Net lot area up to 4,000 sq. ft.: 400 square feet.
 - (ii) Net lot area 4,000 sq. ft. to 10 ac.: 10% of net lot area.
 - (iii) Net lot area over 10 ac.: 1 ac.
- (b) For all other projects, "exterior noise" means noise measured at all exterior areas, which are provided for group or private usable, *open space* purposes.
- (c) For County road construction projects, the exterior noise level due to vehicular traffic impacting a noise sensitive area should not exceed the following values:
 - (i) Federally funded projects: The Noise standard contained in applicable Federal Highway Administration Standards.
 - (ii) Other projects: 60 *decibels (A)*, except if the existing or projected noise level without the project is 58 *decibels (A)* or greater, a 3 *decibel (A)* increase is allowed, up to the maximum permitted by Federal Highway Administration Standards.

"*Group or Private Usable Open Space*" shall mean: Usable open space intended for common use by occupants of a development, either privately owned and maintained or dedicated to a public agency, normally including swimming pools, recreation courts, patios, open landscaped areas, and greenbelts with pedestrian walkways and equestrian and bicycle trails, but not including off-street parking and loading areas or driveways (*Group Usable Open Space*); and usable open space intended for use of occupants of one dwelling unit, normally including yards, decks and balconies (*Private Usable Open Space*).

"*Interior noise*": The following exception shall apply: For rooms which are usually occupied only a part of the day (schools, libraries, or similar), the interior one-hour average sound level, due to noise outside, should not exceed 50 *decibels (A)*.

"Noise sensitive land use" means any residence, hospital, school, hotel, resort, library or any other facility where quiet is an important attribute of the environment.

State of California CCR Title 24 Noise Insulation Standards

The California Code of Regulations (CCR), Title 24, Noise Insulation Standards, states that multi-family dwellings, hotels, and motels located where the CNEL exceeds 60 dBA, must obtain an acoustical analysis showing that the proposed design will limit interior noise to less than 45 dBA CNEL. Interior noise standards are typically applied to sensitive areas within the structure where low noise levels are desirable (such as living rooms, dining rooms, bedrooms, and dens or studies).

Worst-case noise levels, either existing or future, must be used for this determination. Future noise levels must be predicted at least ten years from the time of building permit application. The County of San Diego has adopted the CCR Title 24 standards as part of their Policy 4b implementation.

Wildlife Habitat Noise Regulations

Construction noise generated by this project is regulated by the United States Fish and Wildlife Service (USFWS) and the California Department of Fish and Game (CDFG) for its effect on federally endangered least Bell's vireo (*Vireo bellii pusillus*). Resource agencies have theorized that elevated noise levels can potentially mask songs of various bird species, which are used to attract mates and defend territories.

The San Diego Association of Governments (SANDAG) in a 1990 study entitled "*Comprehensive Species Management Plan for the least Bell's vireo*," estimated (theoretically) that {traffic} noise levels above 60 dBA Leq in vireo breeding areas may sufficiently mask the vireo's song and potentially impact this species during their breeding season which occurs from March 1 to September 1. The SANDAG report conclusions were unclear as to the specific time interval of the measurement, but it is typically taken as being one hour.

Research is on going, but in the absence of species-specific data, these same study results are applied by the Service to other bird species such the California Gnatcatcher (*Poliioptila californica californica*), California least Tern (*Sterna antillarum browni*), Yuma Clapper Rail (*Rallus longirostris yumanensis*), etc.



ANALYSIS METHODOLOGY

Site Monitoring Procedure

A Quest Model 2900 ANSI Type 2 integrating sound level meter was used as the data collection device. The meter was placed at four separate locations (denoted as ML 1 through ML 4) within the project site to ascertain existing ambient noise levels as well as any variation across the project area. The meter was mounted to a tripod approximately five feet above the ground and was placed at project frontages having both a worst-case noise exposure (along Campo Road) and typical rural noise exposure to the north and east. The monitoring locations are shown graphically in Figure 4 on the following page.

The measurements were performed on March 2, 2003 between 1:00 p.m. and 5:00 p.m. during typical afternoon traffic conditions. All equipment was calibrated before testing at ISE's acoustics and vibration laboratory to verify conformance with ANSI S1-4 1983 Type 2 and IEC 651 Type 2 standards.

Construction Noise Impact Assessment Approach

Construction noise emission generators would consist primarily of activities such as earthwork haulage, concrete delivery and other suppliers, graders and pavers, contractor vehicles, and ancillary operating equipment such as diesel-electric generators and lifts.

Construction noise present at the project site was based upon past measured levels (Source: EPA PB 206717, Environmental Protection Agency, 12/31/71, "Noise from Construction Equipment and Operations") of each expected equipment type, the duty cycle of each of the equipment components, and the expected 8-hour energy average noise level (over a given workday) as well as the expected worst-case noise level at the nearest sensitive receptor. Cumulative (i.e., worst case aggregate) levels were calculated for a range of expected noise emissions from the proposed equipment at the closest sensitive receptor per the requirements of Section 36.410 of the County's Noise Ordinance.

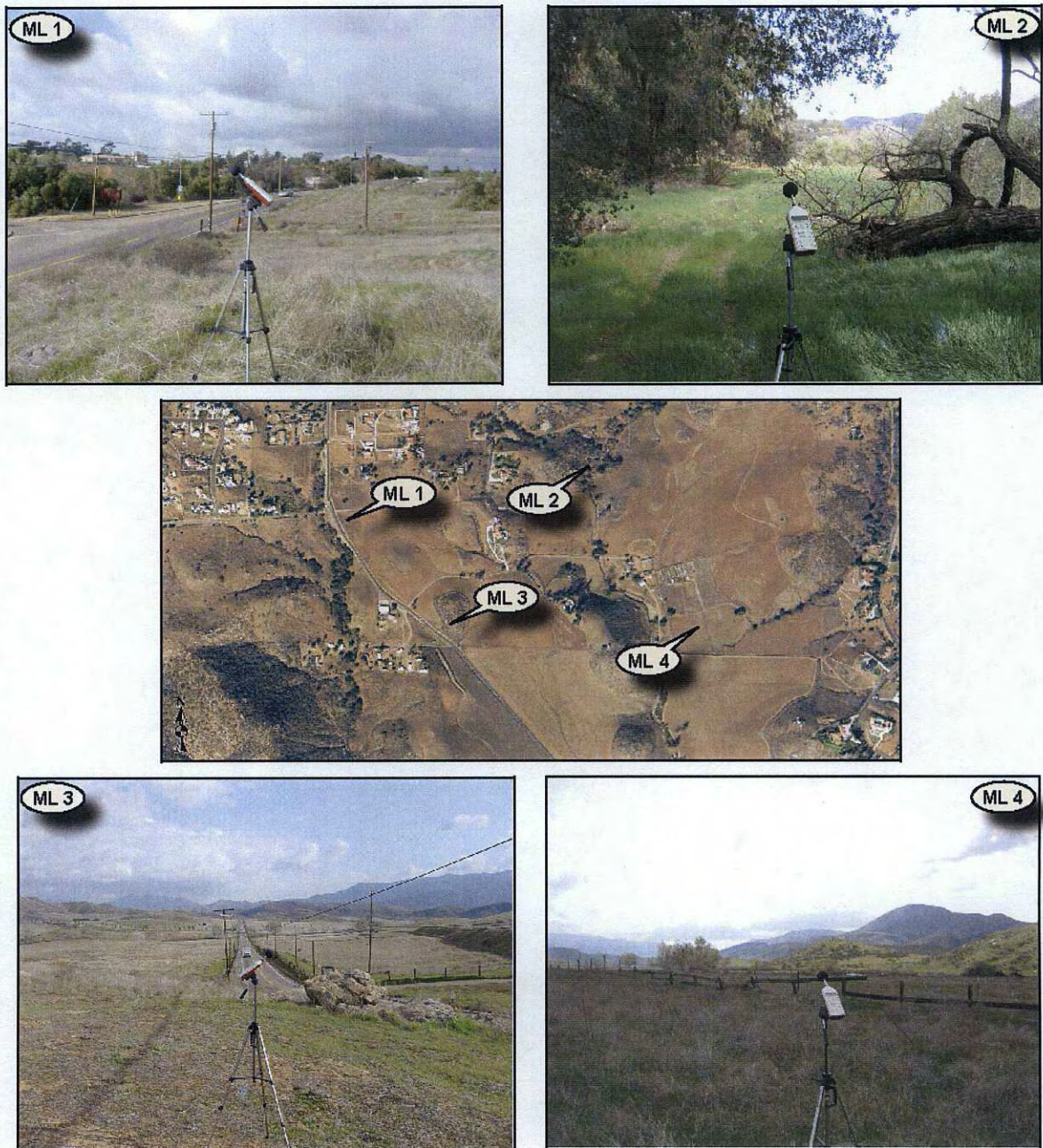


FIGURE 4: Ambient Noise Monitoring Locations within Project Site (ISE 3/04)

Onsite Noise Assessment Approach

Onsite noise generation due to the proposed residential, equestrian, and fire station development would consist of small HVAC systems designed for single-family use, operations of the equestrian facilities, fire station operations, and the continuing utilization of three of the five existing wellheads (the remaining two wellheads would either be destroyed or used solely for monitoring purposes). The wellhead locations are shown below in Figure 5.

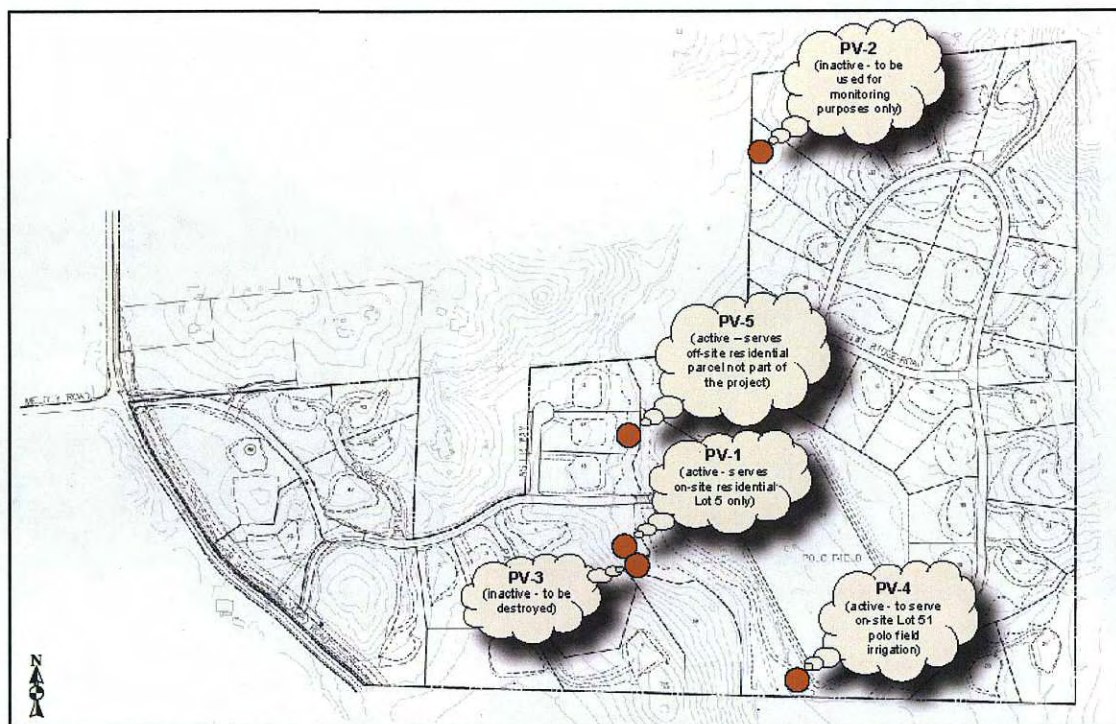


FIGURE 5: Existing Wellhead locations (RBF Consultants Inc. 3/05)

Strictly speaking, the well and pump heads are defined below in the following text:

- a. "Peaceful Valley (PV1) Well #1 is located on Lot 51. This well is under the control of Warren & Vivian Dedrick, the prior owners of Peaceful Valley Ranch, under terms of a Life Estate contract that allows them to maintain their residence on the property until they voluntarily vacate or die. Both Warren and Vivian Dedrick are in their mid to late 80s. The well is in active use for domestic and irrigation water of a 4-acre area around the existing ranch house wherein they reside. The pump for this well is a submersible type and is quite old, pre-dating the Dedrick ownership (the specific age of the unit is not known). Upon the vacancy of the property by Warren & Vivian Dedrick, the existing ranch house will be connected to the planned on-site Otay Water District water system for

domestic and irrigation water, and the existing pump will be abandoned. As noted on the Tentative Map TM5341RPL5, the well itself will be used as a groundwater observation well only on an on-going basis.”

- b. “PV Well #2 (PV2) is located on Lot 34. This well is under the control of the project applicant, current owners of the Peaceful Valley Ranch. The well is not in current use and there is no operational pump. As noted on the Tentative Map TM5341RPL5, the well itself is to be used solely as a groundwater observation well, without a pump. No noise emanations, either present or future, are expected from this location.”
- c. “PV Well #3 (PV3) is located on Lot 51. This well is under the control of the project applicant. This is a hand dug well, not in current use, which has no current pump. As noted on the Tentative Map TM5341RPL5, this well is to be destroyed. No noise emanations, either present or future, are expected from this location.”
- d. “PV Well #4 (PV4) is located on Lot 51 along the southern boundary of the property approximately 160 feet from the nearest proposed house pad. This well is under the control of the project applicant, and is proposed to be retained as the groundwater production well for irrigation of the polo field. This well currently has a temporary submersible pump consisting of 15 HP 230V 3-phase motor with a Goulds pump end for testing purposes. Although a final production pump has not been selected, Hidden Valley Pump has recommended a submersible pump system to produce 40GPM @ 200 TDH with the system to utilize CPC variable frequency drive. The system would utilize a 5 HP 3 phase 230V 4' Groundfos submersible motor with a 5 HP 3 phase 230V CPC Aquavar VFD Controller #CPC20171. Noise data from the manufacturer are not available as these pump motors are of the submersible type which do not generate discernable noise at ground level.”
- e. “PV Well #5 (PV5) is located on Lot 42. This well is under the control of Randall and Susan Stoddard, daughter and son-in-law of Warren & Vivian Dedrick and owners of the "out-parcel." The well is in active use for domestic and irrigation water for their 5-acre parcel and residence. As with the pump at PV1, the pump in this well is of the submersible type and quite old.”

Traffic-Related Acoustical Modeling

The Caltrans Sound 32 Traffic Noise Prediction Model with California (CALVENO) noise emission factors (*based on FHWA RD-77-108 and FHWA/CATL-87/03 standards*) were used to calculate future onsite vehicular traffic noise levels. Model input included a digitized representation of SR 94, as well as future Average Daily Traffic (ADT) volumes from the project traffic study (*Source: Traffic Study for Peaceful Valley Ranch in the County of San Diego, Linscott Law & Greenspan. 3/05*), vehicle mix, receptor elevations, and any applicable topographical attenuation identified in the project site plans provided by RBF Consultants, Inc. dated March 2005 as well as ISE's GIS database (*Source: USGS 2003 Digital Elevation Model*).

Model output consisted of peak hour energy-mean A-weighted sound levels (or Leq-h) for each receptor examined. Peak hour traffic values were calculated for a 10% traffic flow pattern and a 94/4/2 (automobiles/medium/heavy-vehicles) percent mix in accordance with the nature of this servicing roadway. For peak hour traffic percentages between approximately 8 and 12 percent, the energy-mean A-weighted sound level is equivalent to the Community Noise Equivalent Level (CNEL). Outside this range, a maximum variance of up to two dBA occurs between Leq-h and CNEL.

Receptor elevations were considered five feet above the appropriate floor (pad) elevation and were taken near the center of the proposed yard areas of each lot examined. The model assumed a "soft" site sound propagation rule (i.e., a 4.5-dBA loss per doubling of distance from roadway to receiver) in accordance with the existing and proposed site conditions. Second floor receptor areas were modeled at 15 feet above the respective pad elevation. The modeled receptor locations and the approximate future worst-case 60 dBA noise contours for both first and second floor areas are shown in Figure 6 below. The Modeled receptors represent the geometric centroid of each affected outdoor area.

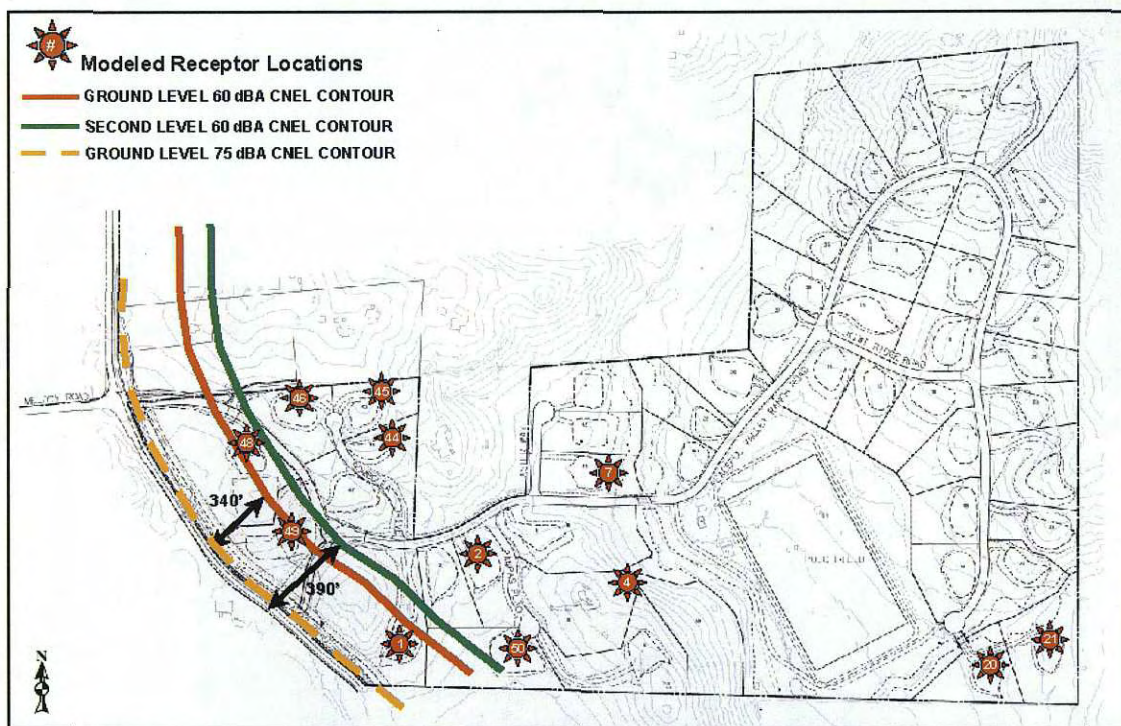


FIGURE 6: Modeled Receptor Locations (ISE 3/05)

Traffic Segment Impact Assessment Approach

The ISE *RoadNoise v1.0* traffic noise prediction model which is based upon Caltrans Sound 32 Traffic Noise Prediction Model with California (CALVENO) noise emission factors (based on FHWA RD-77-108 and FHWA/CA/TL-87/03 standards) was used to calculate the increase in vehicular traffic noise levels along major servicing roadways due to the proposed Peaceful Valley Ranch residential development project. The model assumed a 'soft-site' propagation rule (i.e., 4.5 dBA loss per doubling of distance (DD) between source and receiver), thereby yielding a representative worst-case noise contour set.

Traffic noise model input included a tabulation of the major servicing roadway alignments identified in the aforementioned project traffic study as well as intersection turning movement and segment diagrams which were analytically reduced to peak hour traffic movements and ultimately daily segment ADT levels assuming a 10% flow pattern and a 94/4/2 mix. Modeled traffic speeds represent observed and future predicted average values.



FINDINGS / RECOMMENDATIONS

Existing Ambient Noise Conditions

Testing conditions during the monitoring period were sunny with an average barometric pressure reading of 29.97 in-Hg, an average southwesterly wind speed of 4 to 7 miles per hour (MPH), and an approximate mean temperature of 74 degrees Fahrenheit. The results of the sound level monitoring are shown below in Table 2. The values for the equivalent sound level (Leq-h), the maximum and minimum measured sound levels (Lmax and Lmin), and the statistical indicators L10, L50, and L90, are given for each monitoring location. The observed existing dominant noise source was clearly SR 94.

TABLE 2: Measured Ambient Sound Levels – Peaceful Valley Ranch Residential Site

Site	Start Time	1-Hour Noise Level Descriptors in dBA					
		Leq	Lmax	Lmin	L10	L50	L90
ML 1	1:00 p.m.	59.0	68.1	41.1	60.5	55.1	51.2
ML 2	2:05 p.m.	50.5	65.1	31.4	55.0	37.7	33.2
ML 3	3:10 p.m.	59.4	66.0	44.7	61.0	55.3	50.1
ML 4	4:15 p.m.	39.2	47.0	31.2	42.5	37.4	33.3

Monitoring Locations:

- ML 1: Southwestern portion of project along Campo Road - GPS 32° 42.402 x -116° 52.226.
- ML 2: Northwestern portion of the project site - GPS 32° 42.598 x -116° 51.671.
- ML 3: Southeastern portion of project along Campo Road - GPS 32° 42.238 x -116° 52.062.
- ML 4: Central eastern portion of project site - GPS 32° 42.244 x -116° 51.574.

Measurements performed by ISE on March 2, 2004. Estimated Position Error (EPE) = 16 feet.

Noise levels onsite were found to be consistent with the observed community setting and worst-case proximity to existing noise sources. The values for the equivalent sound levels (Leq-h) for the project site ranged from approximately 59 dBA near Campo Road decreasing to approximately 39 dBA on the northern boundary of the project site. These sound levels were solely a function of the separation distance from the roadway, traffic mix, and intervening topography.

Background noise levels (i.e., L90 levels) were found to be relatively lower than their energy equivalent counterparts (e.g., Leq-h) indicating that Campo Road is the dominant noise source. The acoustic floor, as indicated by the Lmin metric, for the site was found to range between 31 to 45 dBA indicating a rural community setting. The acoustic ceiling for the project as seen by the Lmax metric can be as high as 68 dBA near Campo Road.

Construction Noise Emission Levels

The estimated construction equipment noise emissions are provided below in Tables 3a through -c for the following typical construction phases:

- Rough Grading (i.e., clearing, grubbing, and general pad and road alignment formation). This typically consists of three distinct phases: mobilization, scraper hauls/finishing, and additional site finishing work.
- Underground Utility Construction (i.e., general trench-work, pipe laying with associated base material and cover, and ancillary earthwork required to facilitate placement of water pipe systems, etc.).
- Paving Activities (which would include the movement of any remaining material as well as necessary curb and gutter work, road base material placement and blacktop).

Construction at the project site would typically occur between the hours of 7 a.m. and 7 p.m. Monday through Saturday in accordance with the time restrictions established by the County. Construction activities would include grading, general site development, and finishing features such as landscaping, etc.

The nearest property line interface with respect to the closest offsite residential structure is approximately 160-feet (from Lot 44) distant from any proposed construction activities. The average point-source propagation loss between these receptors and the closest possible construction equipment would be approximately -10.1 dBA.

TABLE 3a: Predicted Construction Noise Levels – Rough Grading Operations

Equipment Type	Qty. Used	Duty Cycle	Source Level @ 50 Feet (dBA)	Average Sound Level between 7a.m and 7p.m. @50 Feet (dBA)
Bulldozer	2	8/12	75	77.0
Loader	2	8/12	70	72.0
Water Tank Truck	1	8/12	70	69.0
Scraper	2	8/12	80	82.0
Worst-Case Aggregate Sum @ 50 Ft. (Σ):				83.7
Average Sound Level between 7a.m and 7p.m. @ 160 ft (Σ):				73.6

Source: EPA PB 206717, Environmental Protection Agency, 12/31/71, "Noise from Construction Equipment and Operations"

TABLE 3b: Predicted Construction Noise Levels – Underground Utility Construction

Equipment Type	Qty. Used	Duty Cycle	Source Level @ 50 Feet (dBA)	Average Sound Level between 7a.m and 7p.m. @50 Feet (dBA)
Backhoe	3	8	75	78.8
Loader	2	8	70	72.0
Concrete Truck	6	0.5	75	69.8
Dump Truck	5	0.5	75	69.0
Worst-Case Aggregate Sum @ 50 Ft. (Σ):				80.4
Average Sound Level between 7a.m and 7p.m. @ 160 ft (Σ):				70.3

Source: EPA PB 206717, Environmental Protection Agency, 12/31/71, "Noise from Construction Equipment and Operations"

TABLE 3c: Predicted Construction Noise Levels – Surface Paving Activities

Equipment Type	Qty. Used	Duty Cycle	Source Level @ 50 Feet (dBA)	Average Sound Level between 7a.m and 7p.m. @50 Feet (dBA)
Dump/Haul Truck	25	0.5	75	76.0
Paver	1	8	70	69.0
Roller	2	8	75	77.0
Worst-Case Aggregate Sum @ 50 Ft. (Σ):				79.9
Average Sound Level between 7a.m and 7p.m. @ 160 ft (Σ):				69.8

Source: EPA PB 206717, Environmental Protection Agency, 12/31/71, "Noise from Construction Equipment and Operations"

Due to the operational nature of the equipment and typical number used, no excessive noise levels are indicated. Propagated construction noise levels at the nearest receptors would be below the County's established threshold of 75 dBA. Therefore, no impacts are expected.

Additionally, no sensitive avian habitat was found onsite and adjacent to the project boundaries (*Source: Biological Technical Report for Peaceful Valley Ranch – RBF Consulting, 2/04*). Thus, no significant biological noise impacts are expected.

Predicted Onsite Noise Levels

Onsite noise generation due to the proposed residential development project would primarily consist of HVAC systems designed for single-family use. These HVAC units are similar to various HVAC units measured in the past by ISE and were found to produce average level events between 48 to 50 dBA at 50 feet from the source. (*Source: Acoustical Site Assessment – Hart Site Assessment, El Cajon, CA - ISE, 2002*). The lot layout for Peaceful Valley development has a minimum lot size of two acres thereby providing adequate attenuation distance between adjacent properties. HVAC activity would be considered below the threshold of significance.

Onsite noise generation from the existing wellheads are submerged and do not generate any significant noise. ISE tested the submersible wellheads onsite to determine if any impacts exist. No physical markings were identified which would provide specification information. The submersible pumps were observed to be inaudible (both by the observer and the sound level meter) as heard from the ground elevation. The electrical junction boxes that feed the pumps, which supply the power to the submersible pumps, emitted an audible buzzing hum, which measured about 47 dBA at a distance of five feet. This buzzing hum would not be considered an impact and would not need any further mitigation. Any new pump replacement would be considered consistent with the current levels if they meet the above measured noise level.

The operational pumps at locations PV1 (Lot 51) and PV5 (Lot 42) on Figure 5 are submersible units each rated at five (5) horsepower or less and they include electrical junction/transformer boxes. The PV4 submersible pump will also be rated at 5 horsepower when upgraded. The predominant noise measured at each wellhead location is the hum from the junction box that generates no more than 47 decibels at a reference distance of five (5) feet. Any future pump replacement at these three active sites would be in compliance with the County Noise Ordinance at the closest property line if this equipment does not exceed the observed levels. An ongoing condition of approval will be necessary to insure future compliance of replacement pumps while the existing condition would be an important design consideration to document the basis for this recommendation.

Pursuant to Major Use Permit MUP04-048, any future replacement of well pumps on Lots 42 and 51 by the permit holder is required not to exceed the existing equipment noise level at each well of 47 decibels (A) at a reference distance of five feet.

Additionally, it should be noted that Lot 48 is planned for a public equestrian facility and Lot 49 (to be deeded to Rural Fire Prevention District) within the project site would need future onsite noise generation studies to determine compliance with the County's Noise Ordinance limits. A site plan was completed for Lot 49 (SPT04-042) in anticipation of the combined fire station facilities, however, it should be noted that Lot 48 is not required to have a site plan.

If Lot 49 is developed as a fire station, the completed site plan (STP04-042) should include a noise analysis and findings to address Noise Ordinance and General Plan requirements for this proposed use. However, Lot 49 is also part of a proposed residential subdivision, its alternative development as a residential site requires a noise analysis to demonstrate its feasibility as a single-family residence. By comparison to Lots 1 and 48, Lot 49 will require mitigation measures for exterior noise sensitive land uses of sufficient size according to Policy 4b. Suitability of exterior measures to limit levels to 60 decibels CNEL or less will be demonstrated for Lots 1 and 48 using 8-foot tall sound attenuation barriers. All three Lots would also be subject to an interior noise analysis dependent on the final location and building plans.

These uses are permitted under the existing zoning designations. Site-specific noise reports will be prepared for Lots 48 and 49 at the time building permits and a site plan are required, respectively. The noise reports will be prepared when specific designs are known. The noise reports will be required to demonstrate that the proposed uses meet the minimum performance standards of the County Noise Ordinance and the Noise Element of the County General Plan.

It should further be noted that all of the activities on Lot 51 would be agricultural operations (horse raising) and thus the County Noise Ordinance (Section 36.417e) would exempt them from the property line sound level limits contained within Section 36.404 during daytime hours (i.e., 7 am to 7 pm). Any operations not covered by the agricultural exemption or any agricultural operations between 7 pm and 7 am would be subject to the property line limits of the County Noise Ordinance.

Future Onsite Traffic Noise Impacts

The primary source of future year 2030 noise near the project site would be from vehicular traffic associated with project developments along Campo Road (i.e., within the project area). This roadway is expected to have a worst-case year 2030 future traffic volume of 24,200 ADT consisting of project and surrounding use generation. This roadway segment was modeled at the worst-case scenario of having a projected speed of 55 MPH South of Melody Road based upon the two-lane Major Road classification and proposed alignment.

The results of the acoustical modeling are shown below in Table 4 for selected lots within the proposed development area. For each lot number examined, the unmitigated ground floor (outdoor pad), and the upper (second story) noise level are presented.

TABLE 4: Onsite Transportation Noise Levels – Peaceful Valley Ranch

Lot No.	Unmitigated Ground Level (dBA)	Mitigated Ground Level (dBA)	Mitigated Second Level (dBA)
48	56.8	56.8	58.9
49	61.5	61.5	62.5
46	55.5	55.5	55.8
47	54.2	54.2	55.0
45	53.1	53.1	53.4
1	61.7	60.1	61.8
50	57.2	57.2	57.3
2	54.7	54.5	55.2
4	54.1	54.1	54.1
7	50.7	50.7	51.4
20	45.1	45.1	45.1
21	43.7	43.7	43.7

Based on model results, residential outdoor usable area within Lot 1 of the proposed project area would exceed the County's noise abatement thresholds of 60 dBA. If Lot 49 is developed as a fire station, in which a fire station use would not be considered a sensitive receptor, it would not be subject to the noise abatement threshold for sensitive uses. However, it should be further noted that if Lot 49 is used or treated as a residential lot, it would be subject to the same noise abatement threshold. Thus, exterior mitigation measures (i.e. additional perimeter noise walls) would be required.

It should be noted that since the future locations of the residential structures are not known, the County might request a Noise Protection Easement (NPE) for the lots identified in Figure 7 on the following page (namely Lots 1, 48 and 49). The NPE would restrict development within these lots to the extent that proposed exterior usable space (i.e., noise sensitive areas) would require mitigation to 60 dBA CNEL or less. The exact mitigation for sound attenuation would be the subject of site-specific analysis for these lots.

For either residential or fire station use, a Noise Protection Easement for Lot 49 would be appropriate. The easement would stipulate that a Noise Study be conducted and approved by the County prior to construction. RFPD has conducted such a study for Lot 49, and it is waiting approval by the County of San Diego. Pending approval, no impacts on the fire station are anticipated.



FIGURE 7: Proposed Exterior Noise Mitigation Plan (ISE 3/05)

An eight-foot high screen perimeter wall around future noise sensitive use areas (i.e. rear yard areas, rear patios, and pool areas or similar uses) was found to mitigate exterior noise levels within the counties acceptable 60 dBA CNEL noise threshold. The proposed wall location is shown in Figure 7 for both Lots 1 and 48.

The wall structure should be of solid construction and could consist of any berm/masonry combination. Additionally, residential structures are typically 15 to 20 feet above finished floor and if properly orientated and designed (i.e. front yard area facing the dominant noise source), could be used as effective noise mitigation. Construction of a sound attenuation barrier, such a solid sound wall is considered a feasible mitigation measure because it can be implemented for each lot on an individual basis as needed, can be constructed of readily available construction materials, and its implementation does not create any secondary adverse effects. Finally, it should further be noted that if

Lot 49 is used or treated as a residential lot, it would be subject to the same mitigation identified above.

Predicted Vehicular Noise Levels along Adjacent Roadways

The results showing the effect of traffic noise increases on the various servicing roadway segments associated with the proposed Peaceful Valley Ranch residential development are presented in Tables 5a through -i for the following scenarios:

Table 5a)	Existing Conditions
Table 5b)	Existing plus Project Conditions
Table 5c)	Existing plus Cumulative Projects Condition
Table 5d)	Existing plus Project plus Cumulative Projects
Table 5e)	Year 2030 w/ SC 760 Roadway (Proposed Jamul Casino Project)
Table 5f)	Year 2030 w/ SC 760 Roadway (Worst-Case Jamul Casino Project)
Table 5g)	Year 2030 w/out SC 760 Roadway (Proposed Jamul Casino Project)
Table 5h)	Year 2030 w/out SC 760 Roadway (Worst-Case Jamul Casino Project)
Table 5i)	Project related Traffic Noise Increase

For each roadway segment examined, the worst case average daily traffic volume (ADT) and observed/predicted speeds are shown along with the corresponding reference noise level at 50-feet (in dBA). Additionally, the line-of-sight distance to the 60 and 65 dBA CNEL contours are provided as an indication of the worst-case theoretical traffic noise contour placement without the effects of topography.

TABLE 5a: Existing Conditions – Peaceful Valley Ranch

	Roadway Segment Name	Volume (ADT)	Vehicle Speed (MPH)	SPL at 50 feet	Distance to 65 dBA CNEL Contour	Distance to 60 dBA CNEL Contour
SR-94	Jamacha Road to Steele Canyon Road	20,600	50	73.7	191	411
	Steele Canyon Road to Lyons Valley Road	18,000	50	73.1	174	375
	South of Melody Road	11,900	50	71.3	132	285

Notes:

- Peak Hour Volume - Source: Traffic Impact Assessment – LL&G, Inc. 8/06
- All values given in dBA CNEL. Contours assumed to be line-of-sight perpendicular (⊥) distance.

TABLE 5b: Existing plus Project Conditions – Peaceful Valley Ranch

	Roadway Segment Name	Volume (ADT)	Vehicle Speed (MPH)	SPL at 50 feet	Distance to 65 dBA CNEL Contour	Distance to 60 dBA CNEL Contour
SR-94	Jamacha Road to Steele Canyon Road	21,200	50	73.8	194	419
	Steele Canyon Road to Lyons Valley Road	18,670	50	73.3	179	385
	South of Melody Road	12,610	55	72.5	159	343

Notes:

- Peak Hour Volume - Source: Traffic Impact Assessment – LL&G, Inc. 8/06
- All values given in dBA CNEL. Contours assumed to be line-of-sight perpendicular (L) distance.

TABLE 5c: Existing plus Cumulative Projects – Peaceful Valley Ranch

	Roadway Segment Name	Volume (ADT)	Vehicle Speed (MPH)	SPL at 50 feet	Distance to 65 dBA CNEL Contour	Distance to 60 dBA CNEL Contour
SR-94	Jamacha Road to Steele Canyon Road	34,925	50	76.0	271	584
	Steele Canyon Road to Lyons Valley Road	33,612	50	75.8	264	569
	South of Melody Road	20,440	55	74.6	219	473

Notes:

- Peak Hour Volume - Source: Traffic Impact Assessment – LL&G, Inc. 8/06
- All values given in dBA CNEL. Contours assumed to be line-of-sight perpendicular (L) distance.

TABLE 5d: Existing plus Project plus Cumulative Projects – Peaceful Valley Ranch

	Roadway Segment Name	Volume (ADT)	Vehicle Speed (MPH)	SPL at 50 feet	Distance to 65 dBA CNEL Contour	Distance to 60 dBA CNEL Contour
SR-94	Jamacha Road to Steele Canyon Road	35,525	50	76.1	274	591
	Steele Canyon Road to Lyons Valley Road	34,282	50	75.9	268	577
	South of Melody Road	21,150	55	74.8	224	484

Notes:

- Peak Hour Volume - Source: Traffic Impact Assessment – LL&G, Inc. 8/06
- All values given in dBA CNEL. Contours assumed to be line-of-sight perpendicular (L) distance.

TABLE 5e: Year 2030 w/ SC 760 Roadway (Proposed Casino) – Peaceful Valley Ranch

	Roadway Segment Name	Volume (ADT)	Vehicle Speed (MPH)	SPL at 50 feet	Distance to 65 dBA CNEL Contour	Distance to 60 dBA CNEL Contour
SR-94	Steele Canyon Road to Lyons Valley Road	33,500	50	75.8	264	568
	Lyons Valley Road to Melody Road	31,800	50	75.6	255	549
	South of Melody Road	15,500	55	73.4	182	393

Notes:

- Peak Hour Volume - Source: Traffic Impact Assessment – LL&G, Inc. 8/06
- All values given in dBA CNEL. Contours assumed to be line-of-sight perpendicular (⊥) distance.

TABLE 5f: Year 2030 w/ SC 760 Roadway (Worst-Case Casino) – Peaceful Valley Ranch

	Roadway Segment Name	Volume (ADT)	Vehicle Speed (MPH)	SPL at 50 feet	Distance to 65 dBA CNEL Contour	Distance to 60 dBA CNEL Contour
SR-94	Steele Canyon Road to Lyons Valley Road	38,800	50	76.5	291	626
	Lyons Valley Road to Melody Road	31,800	50	75.6	255	549
	South of Melody Road	16,500	55	73.7	190	410

Notes:

- Peak Hour Volume - Source: Traffic Impact Assessment – LL&G, Inc. 8/06
- All values given in dBA CNEL. Contours assumed to be line-of-sight perpendicular (⊥) distance.

TABLE 5g: Year 2030 w/o SC 760 Roadway (Proposed Casino) – Peaceful Valley Ranch

	Roadway Segment Name	Volume (ADT)	Vehicle Speed (MPH)	SPL at 50 feet	Distance to 65 dBA CNEL Contour	Distance to 60 dBA CNEL Contour
SR-94	Steele Canyon Road to Lyons Valley Road	33,500	50	75.8	264	568
	Lyons Valley Road to Melody Road	21,200	50	73.8	194	419
	South of Melody Road	15,600	55	73.5	183	395

Notes:

- Peak Hour Volume - Source: Traffic Impact Assessment – LL&G, Inc. 8/06
- All values given in dBA CNEL. Contours assumed to be line-of-sight perpendicular (⊥) distance.

TABLE 5h: Year 2030 w/o SC 760 Roadway (Worst-Case Casino) – Peaceful Valley Ranch

	Roadway Segment Name	Volume (ADT)	Vehicle Speed (MPH)	SPL at 50 feet	Distance to 65 dBA CNEL Contour	Distance to 60 dBA CNEL Contour
SR-94	Steele Canyon Road to Lyons Valley Road	38,800	50	76.5	291	626
	Lyons Valley Road to Melody Road	32,200	50	75.7	257	553
	South of Melody Road	16,500	55	73.7	190	410

Notes:

- Peak Hour Volume - Source: Traffic Impact Assessment – LL&G, Inc. 8/06
- All values given in dBA CNEL. Contours assumed to be line-of-sight perpendicular (L) distance.

TABLE 5i: Project Related Traffic Noise Increases

	Roadway Segment Name	Existing	Existing + Project	Project Related Difference	Existing + Cumulative	Existing + Cumulative + Project	Project Related Difference	Cumulative Related Difference
SR-94	Jamacha to Steele Canyon	73.7	73.8	0.1	76.0	76.1	0.1	2.3
	Steele Canyon to Lyons Valley	73.1	73.3	0.2	75.8	75.9	0.1	2.6
	South of Melody Road	71.3	72.5	1.2	74.6	74.8	0.2	2.3

Notes:

All Sound Pressure Levels (SPL) values given in dBA CNEL

As can be seen from the traffic data, the largest project-related noise increase would occur along SR-94 south of Melody Road. This increase would be 1.2 dBA CNEL, which is below the 3.0-dBA significance thresholds. Further, the cumulative increase in traffic noise, regardless of this project, would be 2.6 dBA CNEL.

Alternatives to the Project

Five alternatives to the proposed project were evaluated to determine if potential noise impacts would be reduced. A summary of the project alternatives is provided in Table 6 on the following page.

The No Development Alternative assumes that the project site would not be developed with the proposed project. The 53 residential units allowed under the existing (18) Multiple Rural Use and (17) Estate Residential General Plan designations would not be constructed. The project site would remain in its present condition and would continue to support the existing residential and agricultural uses.

TABLE 6: Peaceful Valley Ranch Alternatives

Impact Category	No Development Alternative	No Project Alternative	Existing Land Use Alternative	Residential Use Alternative	No Groundwater Alternative
Noise	Lesser	Lesser	Greater	Greater	Similar
Justification	No development proposed adjacent to SR 94	Fewer residential units proposed adjacent to SR 94	Greater # of residential units proposed adjacent to SR 94	Greater # of residential units proposed adjacent to SR 94	Similar # of residential units proposed adjacent to SR 94
Fire Station Included?	No (on leased parcel – not part of project)	No (on leased parcel – not part of project)	Yes (parcel reserved)	Yes (parcel reserved)	Yes (parcel reserved)

In addition, the site proposed for location of the joint RFPD and USFWS fire station would not be dedicated; the fire station would instead be located on a leased parcel and the RFPD would be financially responsible for construction of Peaceful Valley Road to Melody Road to provide access to the site. Noise impacts would be reduced under this alternative because no new sensitive receptors (homes) would be developed adjacent to SR 94. No construction noise associated with the construction of the homes would be generated. Therefore, potential noise impacts are less than the proposed project.

The No Project Alternative would develop the project site as allowed under the current land use and zoning designations without special permitting. The No Project Alternative would result in residential development of the five legal lots established by the underlying parcel map, and would allow continuation of agricultural uses by lot owners, if they elect to do so. The eastern portion of the project would not be annexed into the MWD and SDCWA and would remain dependent on groundwater, as annexation to the District would be financially unjustifiable for the small number of residential lots proposed.

Therefore, lots would depend on groundwater resources for both residential and agricultural uses. This alternative would also leave Jamul Creek Road (SC 760) alignment in its currently adopted location. In addition, the site proposed for location of the joint RFPD and USFWS fire station would not be dedicated; the fire station would instead be located on a leased parcel and the RFPD would be financially responsible for construction of Peaceful Valley Road to Melody Road to provide access to the site. This would likely inhibit the District's ability to relocate on the subject property, thereby affecting the ability of the project to contribute to increased public safety and fire protection service capabilities for the Jamul community and the surrounding area.

Noise impacts would be reduced under this alternative because no new sensitive receptors (homes) would be developed adjacent to SR 94. No construction noise associated with the construction of the homes would be generated. Therefore, potential noise impacts are less than the proposed project.

The Existing Land Use Regulations Alternative proposes a design that has no public or private equestrian facilities and subdivides the property for residential development, consistent with the existing zoning regulations that apply to the property. This alternative would result in 33 dwelling units (theoretical yield), as allowed under the existing A-72 (2) and A-72 (8) zoning regulations. On the 28.85-acre portion of the property, existing zoning would allow 2-acre lots, resulting in approximately 14 dwelling units. On the 152.46-acre portion, the A72 (8) zone would allow for 8-acre lots, resulting in approximately 19 dwelling units.

This alternative would not include construction of the equestrian facilities; however, a parcel would still be reserved for construction of the fire station. The eastern portion of the property would be annexed into the SDCWA and MWD for water service and, therefore, would not depend on groundwater. This alternative would also leave the SC 760 alignment in its adopted location. Under this project alternative a greater number of homes would be built adjacent to SR 94 to maximize the yield in the area zoned A72 (2). As a result, an increased number of homes would be exposed to traffic noise from SR 94.

Similar to the proposed project, a noise protection easement would be required for lots with build-able areas within the 60 dBA CNEL contour. As shown with the proposed project traffic noise levels along SR 94 can be mitigated to less than significant with the incorporation of a noise wall or sound barrier along the western side of the house pad. Based on project traffic volumes, and assuming that house pads are generally at-grade and are located approximately 200 feet from the centerline of SR 94, potential noise impacts could be mitigated with the same sound barrier mentioned above. A sound barrier of this height would be a feasible mitigation measure and could be implemented. This alternative proposes fewer numbers of homes than the proposed project resulting in an incremental reduction in construction noise. Because of the increased number of homes exposed to traffic noise from SR 94, potential noise impacts are greater than the proposed project.

The Residential Use Alternative proposes no public and private equestrian facilities and application of the (17) Estate Residential land use designation over the entire property. This alternative would allow up to 90 two-acre minimum residential lots. No additional development, such as the public/private equestrian facilities is proposed with this alternative; however, reservation of a lot for relocation of the fire station would occur. The eastern portion of the property would be annexed into the SDCWA and would not depend upon groundwater use, similar to the proposed project. This alternative would eliminate the SC 760 alignment from the County's Circulation Element, similar to the proposed project. Under this project alternative a greater number of homes would be built adjacent to SR 94 to maximize the yield in the area zoned A72 (2).

As a result, an increased number of homes would be exposed to traffic noise from SR 94. Mitigation measures such as those described for the Existing Land Use Regulations Alternative above would be required for this alternative to reduce potential noise impacts to less than significant. This alternative proposes a fewer number of homes than the proposed project resulting in an incremental reduction in construction noise. Because of the increased number of homes exposed to traffic noise from SR 94, potential noise impacts are greater than the proposed project.

The No Groundwater Alternative would develop the project site as proposed by the current project, with 48 residential lots and all accompanying uses, such as the public and private equestrian facilities. A lot would be reserved on-site for future relocation of the fire station. Similar to the proposed project, the eastern portion of the property would require annexation into the CWA and MWD for water service; however, this alternative does not propose the use of groundwater for irrigation of the polo field. The project design under this alternative is the same as the proposed project, and as such, potential noise impacts are similar to the proposed project.

Three project alternatives including the Existing Land Use Regulations, the Reduced Use, and the No Groundwater options will require Noise Protection Easements for any future residential subdivision due to traffic noise from SR-94 and perhaps SC-760. Without examination of any final lot configuration, it is expected that the Easement would include any Lots significantly covered or enveloped within 390 feet of the centerline of SR-94. As noted earlier, the final mitigation measures for exterior noise sensitive land uses would be comparable to the preferred project (8-foot tall sound attenuation barriers) provided the future pads of these Lots are no closer than 200 feet from the roadway's centerline.

Past, Present, and Reasonably Anticipated Future Project Impacts

Cumulative Noise Levels Along Adjacent Roadways

Referencing Table 5i above provides an analysis of the potential cumulative impacts associated with increases in traffic noise as a result increased traffic volumes. The sound levels calculated in Table 5i are based off of cumulative traffic volumes provided by the traffic impact analysis (*Source: LL&G, Inc., 2006*) prepared for the proposed project. These traffic volumes are provided in Table 5d. The cumulative traffic volumes include existing traffic volumes, plus the traffic generated by the proposed project, plus the traffic generated by 15 additional projects in the area that are anticipated to contribute additional traffic to the surrounding roadway network.

As shown in Table 5i, the only roadway segment in which the threshold of 3 dBA CNEL is exceeded is the segment of SR 94 south of Melody Road. The cumulative noise level increase is 3.5 dBA CNEL. An increase of 3 dBA CNEL is considered a significant impact. However, the maximum project related contribution would only be 0.2 dBA or about 5.7% of the overall noise level increase. This increase will develop over a period of approximately five years and wouldn't be perceivable given this long duration.

Furthermore, the cumulative noise increase would exceed the 3-dBA threshold with or without the project. As such, the 0.2 dBA CNEL does not contribute to an exceedance of the 3 dBA CNEL threshold, and potential impacts are considered to be less than cumulatively considerable and no mitigation is required.

Cumulative Construction Noise Levels

To assess cumulative construction noise, a review of past, present, and reasonably anticipated projects were reviewed based on project applications submitted to the County of San Diego Department of Planning and Land Use. Currently, there are only three projects (due to their spatial location on servicing roadways) that would be exposed to this project-generated traffic noise increase; namely, the Jamul Indian Village development (located across SR 94 from the proposed project), TPM 20599; Blanco Parcel Map development (located adjacent to the northwest corner of the proposed project next to SR 94), and the TM 5154RPL; Hendrix Subdivision (located adjacent to the project site northwest of the central drainage).

Based on the predicted construction noise calculations provided in Tables 3a through -c, potential construction noise is not expected to exceed 75-dBA construction noise threshold outside of the property lines. As such, cumulative construction impacts of these four projects would be less than significant because the projected cumulative construction operations is not high enough to generate 75-dBA noise level contours which would adversely affect (i.e., touch the construction noise contours) of any of the cumulative projects. Therefore, potential cumulative construction noise impacts are considered less than cumulatively considerable and no mitigation is required.



CERTIFICATION OF ACCURACY AND QUALIFICATIONS

This report was prepared by Investigative Science and Engineering, Inc. (ISE) located at 16486 Bernardo Center Drive, Suite 278, San Diego, CA 92128. The members of its professional staff contributing to the report are listed below:

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ISE affirms to the best of its knowledge and belief that the statements and information contained herein are in all respects true and correct as of the date of this report. Should the reader have any questions regarding the findings and conclusions presented in this report, please do not hesitate to contact ISE at (858) 451-3505.

Content and information contained within this report is intended only for the subject project and is protected under 17 U.S.C. §§ 101 through 810. Original reports contain non-photo blue ISE watermark at the bottom of each page.

Approved as to Form and Content:

Rick Tavares, Ph.D.
Project Principal
Investigative Science and Engineering, Inc.

Attachments to this report: Sound32 Traffic Noise Prediction Model Decks

S32 INPUT DECK – UNMITIGATED GROUND LEVEL CONDITIONS

PEACEFUL VALLEY RANCH
T-PEAK HOUR TRAFFIC CONDITIONS, 1
2275 , 55 , 97 , 55 , 48 , 55
L-SR 94, 1
N,1304,5666,1056,
N,1332,4617,1024,
N,1393,3450,974,
N,1474,3147,960,
N,1846,2556,944,
N,2316,2198,945,
N,3127,1401,895,
N,4152,1242,827,
B-BARRIER PLACEMENT, 1 , 1 , 0 , 0
1651,4468,1000,1000,
1629,3973,1000,1000,
1656,3744,990,990,
1731,3439,980,980,
1785,3253,970,970,
1708,3180,964,964,
1685,3137,964,964,
1747,3037,964,964,
1869,3095,964,964,
1955,3039,960,960,
B-BARRIER PLACEMENT, 2 , 1 , 0 , 0
1955,3039,960,960,
2122,3038,970,970,
2059,2980,970,970,
2105,2886,970,970,
2099,2799,980,980,
2165,2649,970,970,
2336,2572,950,950,
2376,2449,940,940,
2463,2209,940,940,
2685,2057,940,940,
B-BARRIER PLACEMENT, 3 , 1 , 0 , 0
2685,2057,940,940,
2743,1969,910,910,
2866,1936,910,910,
2980,1939,910,910,
3056,2087,910,910,
3171,2067,890,890,
3470,2047,890,890,
B-BARRIER PLACEMENT, 4 , 1 , 0 , 0
2199.,2725,970,970,
2321.,2628,945,945,
2239.,2555,945,945,
2236.,2434,945,945,
2421.,2274,945,945,
2597.,2323,980,980,
R, 1 , 65 ,10
2144,2963,973., LOT 48
R, 2 , 65 ,10
2342,2529,952., LOT 49
R, 3 , 65 ,10
2354,3172,996., LOT 46
R, 4 , 65 ,10
2625,2776,956., LOT 47
R, 5 , 65 ,10
2685,3173,992., LOT 45
R, 6 , 65 ,10
2857,2080,923., LOT 1
R, 7 , 65 ,10
3394,2023,889., LOT 50
R, 8 , 65 ,10



3045,2418,915., LOT 2
R, 9 , 65 ,10
3976,2077,943., LOT 4
R, 10 , 65 ,10
3913,2537,865., LOT 7
R, 11 , 65 ,10
5584,1930,871., LOT 20
R, 12 , 65 ,10
5869,2038,888., LOT 21
D, 4.5
ALL, ALL
C,C

SOUND32 - RELEASE 07/30/91

TITLE: PEACEFUL VALLEY RANCH

BARRIER DATA

BAR ELE	0	1	BARRIER HEIGHTS							BAR ID	LENGTH	TYPE
1	-	0.*								B1 P1	495.5	BERM
2	-	0.*								B1 P2	230.8	BERM
3	-	0.*								B1 P3	314.2	BERM
4	-	0.*								B1 P4	193.9	BERM
5	-	0.*								B1 P5	106.3	BERM
6	-	0.*								B1 P6	48.8	BERM
7	-	0.*								B1 P7	117.7	BERM
8	-	0.*								B1 P8	135.1	BERM
9	-	0.*								B1 P9	102.7	BERM
10	-	0.*								B2 P1	167.3	BERM
11	-	0.*								B2 P2	85.6	BERM
12	-	0.*								B2 P3	104.7	BERM
13	-	0.*								B2 P4	87.8	BERM
14	-	0.*								B2 P5	164.2	BERM
15	-	0.*								B2 P6	188.6	BERM
16	-	0.*								B2 P7	129.7	BERM
17	-	0.*								B2 P8	255.3	BERM
18	-	0.*								B2 P9	269.1	BERM
19	-	0.*								B3 P1	109.6	BERM
20	-	0.*								B3 P2	127.3	BERM
21	-	0.*								B3 P3	114.0	BERM
22	-	0.*								B3 P4	166.4	BERM
23	-	0.*								B3 P5	118.4	BERM
24	-	0.*								B3 P6	299.7	BERM
25	-	0.*								B4 P1	157.9	BERM
26	-	0.*								B4 P2	109.8	BERM
27	-	0.*								B4 P3	121.0	BERM
28	-	0.*								B4 P4	244.6	BERM
29	-	0.*								B4 P5	186.0	BERM

	0	1	2	3	4	5	6	7				

REC	REC ID	DNL	PEOPLE	LEQ (CAL)
1	LOT 48	65.	10.	56.8
2	LOT 49	65.	10.	61.5
3	LOT 46	65.	10.	55.5
4	LOT 47	65.	10.	54.2
5	LOT 45	65.	10.	53.1
6	LOT 1	65.	10.	61.7
7	LOT 50	65.	10.	57.2
8	LOT 2	65.	10.	54.7
9	LOT 4	65.	10.	54.1
10	LOT 7	65.	10.	50.7
11	LOT 20	65.	10.	45.1
12	LOT 21	65.	10.	43.7

S32 INPUT DECK – MITIGATED GROUND LEVEL

PEACEFUL VALLEY RANCH GROUND FLOOR MITIGATED

T-PEAK HOUR TRAFFIC CONDITIONS, 1

2275 , 55 , 97 , 55 , 48 , 55

L-SR 94, 1

N,1304,5666,1056,

N,1332,4617,1024,

N,1393,3450,974,

N,1474,3147,960,

N,1846,2556,944,

N,2316,2198,945,

N,3127,1401,895,

N,4152,1242,827,

B-BARRIER PLACEMENT, 1 , 1 , 0 ,0

1651,4468,1000,1000,

1629,3973,1000,1000,

1656,3744,990,990,

1731,3439,980,980,

1785,3253,970,970,

1708,3180,964,964,

1685,3137,964,964,

1747,3037,964,964,

1869,3095,964,964,

1955,3039,960,960,

B-BARRIER PLACEMENT, 2 , 1 , 0 ,0

1955,3039,960,960,

2122,3038,970,970,

2059,2980,970,970,

2105,2886,970,970,

2099,2799,980,980,

2165,2649,970,970,

2336,2572,950,950,

2376,2449,940,940,

2463,2209,940,940,

2685,2057,940,940,

B-BARRIER PLACEMENT, 3 , 1 , 0 ,0

2685,2057,940,940,

2743,1969,910,910,

2866,1936,910,910,

2980,1939,910,910,

3056,2087,910,910,

3171,2067,890,890,

3470,2047,890,890,

B-BARRIER PLACEMENT, 4 , 1 , 0 ,0

2199.,2725,970,970,

2321.,2628,945,945,

2239.,2555,945,945,

2236.,2434,945,945,

2421.,2274,945,945,

2597.,2323,980,980,

B-MITIGATION WALL, 5 , 2 , 0 ,0

2800.,2067,918,926,

2832.,1995,918,926,

2920.,2050,918,926,

R, 1 , 65 ,10

2144,2963,973., LOT 48

R, 2 , 65 ,10

2342,2529,952., LOT 49

R, 3 , 65 ,10

2354,3172,996., LOT 46

R, 4 , 65 ,10

2625,2776,956., LOT 47

R, 5 , 65 ,10

2685,3173,992., LOT 45

R, 6 , 65 ,10



2857,2080,923., LOT 1
R, 7 , 65 ,10
3394,2023,889., LOT 50
R, 8 , 65 ,10
3045,2418,915., LOT 2
R, 9 , 65 ,10
3976,2077,943., LOT 4
R, 10 , 65 ,10
3913,2537,865., LOT 7
R, 11 , 65 ,10
5584,1930,871., LOT 20
R, 12 , 65 ,10
5869,2038,888., LOT 21
D, 4.5
ALL, ALL
C, C

SOUND32 - RELEASE 07/30/91

TITLE: PEACEFUL VALLEY RANCH GROUND FLOOR MITIGATED

BARRIER DATA

BAR ELE	0	1	BARRIER HEIGHTS							BAR ID	LENGTH	TYPE
1	-	0.*								B1 P1	495.5	BERM
2	-	0.*								B1 P2	230.8	BERM
3	-	0.*								B1 P3	314.2	BERM
4	-	0.*								B1 P4	193.9	BERM
5	-	0.*								B1 P5	106.3	BERM
6	-	0.*								B1 P6	48.8	BERM
7	-	0.*								B1 P7	117.7	BERM
8	-	0.*								B1 P8	135.1	BERM
9	-	0.*								B1 P9	102.7	BERM
10	-	0.*								B2 P1	167.3	BERM
11	-	0.*								B2 P2	85.6	BERM
12	-	0.*								B2 P3	104.7	BERM
13	-	0.*								B2 P4	87.8	BERM
14	-	0.*								B2 P5	164.2	BERM
15	-	0.*								B2 P6	188.6	BERM
16	-	0.*								B2 P7	129.7	BERM
17	-	0.*								B2 P8	255.3	BERM
18	-	0.*								B2 P9	269.1	BERM
19	-	0.*								B3 P1	109.6	BERM
20	-	0.*								B3 P2	127.3	BERM
21	-	0.*								B3 P3	114.0	BERM
22	-	0.*								B3 P4	166.4	BERM
23	-	0.*								B3 P5	118.4	BERM
24	-	0.*								B3 P6	299.7	BERM
25	-	0.*								B4 P1	157.9	BERM
26	-	0.*								B4 P2	109.8	BERM
27	-	0.*								B4 P3	121.0	BERM
28	-	0.*								B4 P4	244.6	BERM
29	-	0.*								B4 P5	186.0	BERM
30	-	8.*								B5 P1	78.8	MASONRY
31	-	8.*								B5 P2	103.8	MASONRY
	0	1	2	3	4	5	6	7				

REC	REC ID	DNL	PEOPLE	LEQ(CAL)
1	LOT 48	65.	10.	56.8
2	LOT 49	65.	10.	61.5
3	LOT 46	65.	10.	55.5
4	LOT 47	65.	10.	54.2
5	LOT 45	65.	10.	53.1
6	LOT 1	65.	10.	60.1
7	LOT 50	65.	10.	57.2
8	LOT 2	65.	10.	54.5
9	LOT 4	65.	10.	54.1
10	LOT 7	65.	10.	50.7
11	LOT 20	65.	10.	45.1
12	LOT 21	65.	10.	43.7

S32 INPUT DECK –MITIGATED SECOND STORY LEVELS

PEACEFUL VALLEY RANCH GROUND FLOOR MITIGATED

T-PEAK HOUR TRAFFIC CONDITIONS, 1

2275 , 55 , 97 , 55 , 48 , 55

L-SR 94, 1

N,1304,5666,1056,

N,1332,4617,1024,

N,1393,3450,974,

N,1474,3147,960,

N,1846,2556,944,

N,2316,2198,945,

N,3127,1401,895,

N,4152,1242,827,

B-BARRIER PLACEMENT, 1 , 1 , 0 , 0

1651,4468,1000,1000,

1629,3973,1000,1000,

1656,3744,990,990,

1731,3439,980,980,

1785,3253,970,970,

1708,3180,964,964,

1685,3137,964,964,

1747,3037,964,964,

1869,3095,964,964,

1955,3039,960,960,

B-BARRIER PLACEMENT, 2 , 1 , 0 , 0

1955,3039,960,960,

2122,3038,970,970,

2059,2980,970,970,

2105,2886,970,970,

2099,2799,980,980,

2165,2649,970,970,

2336,2572,950,950,

2376,2449,940,940,

2463,2209,940,940,

2685,2057,940,940,

B-BARRIER PLACEMENT, 3 , 1 , 0 , 0

2685,2057,940,940,

2743,1969,910,910,

2866,1936,910,910,

2980,1939,910,910,

3056,2087,910,910,

3171,2067,890,890,

3470,2047,890,890,

B-BARRIER PLACEMENT, 4 , 1 , 0 , 0

2199.,2725,970,970,

2321.,2628,945,945,

2239.,2555,945,945,

2236.,2434,945,945,

2421.,2274,945,945,

2597.,2323,980,980,

B-MITIGATION WALL, 5 , 2 , 0 , 0

2800.,2067,918,926,

2832.,1995,918,926,

2920.,2050,918,926,

R, 1 , 65 , 10

2144,2963,973., LOT 48

R, 2 , 65 , 10

2342,2529,952., LOT 49

R, 3 , 65 , 10

2354,3172,996., LOT 46

R, 4 , 65 , 10

2625,2776,956., LOT 47

R, 5 , 65 , 10

2685,3173,992., LOT 45

R, 6 , 65 , 10



2857,2080,923., LOT 1
R, 7 , 65 ,10
3394,2023,889., LOT 50
R, 8 , 65 ,10
3045,2418,915., LOT 2
R, 9 , 65 ,10
3976,2077,943., LOT 4
R, 10 , 65 ,10
3913,2537,865., LOT 7
R, 11 , 65 ,10
5584,1930,871., LOT 20
R, 12 , 65 ,10
5869,2038,888., LOT 21
D, 4.5
ALL, ALL
C,C



SOUND32 - RELEASE 07/30/91

TITLE: PEACEFUL VALLEY RANCH SECOND FLOOR MITIGATED

BARRIER DATA

BAR ELE	0	1	BARRIER HEIGHTS							BAR ID	LENGTH	TYPE
1	-	0.*								B1 P1	495.5	BERM
2	-	0.*								B1 P2	230.8	BERM
3	-	0.*								B1 P3	314.2	BERM
4	-	0.*								B1 P4	193.9	BERM
5	-	0.*								B1 P5	106.3	BERM
6	-	0.*								B1 P6	48.8	BERM
7	-	0.*								B1 P7	117.7	BERM
8	-	0.*								B1 P8	135.1	BERM
9	-	0.*								B1 P9	102.7	BERM
10	-	0.*								B2 P1	167.3	BERM
11	-	0.*								B2 P2	85.6	BERM
12	-	0.*								B2 P3	104.7	BERM
13	-	0.*								B2 P4	87.8	BERM
14	-	0.*								B2 P5	164.2	BERM
15	-	0.*								B2 P6	188.6	BERM
16	-	0.*								B2 P7	129.7	BERM
17	-	0.*								B2 P8	255.3	BERM
18	-	0.*								B2 P9	269.1	BERM
19	-	0.*								B3 P1	109.6	BERM
20	-	0.*								B3 P2	127.3	BERM
21	-	0.*								B3 P3	114.0	BERM
22	-	0.*								B3 P4	166.4	BERM
23	-	0.*								B3 P5	118.4	BERM
24	-	0.*								B3 P6	299.7	BERM
25	-	0.*								B4 P1	157.9	BERM
26	-	0.*								B4 P2	109.8	BERM
27	-	0.*								B4 P3	121.0	BERM
28	-	0.*								B4 P4	244.6	BERM
29	-	0.*								B4 P5	186.0	BERM
30	-	8.*								B5 P1	78.8	MASONRY
31	-	8.*								B5 P2	103.8	MASONRY

0 1 2 3 4 5 6 7

REC	REC ID	DNL	PEOPLE	LEQ(CAL)
1	LOT 48	65.	10.	58.9
2	LOT 49	65.	10.	62.5
3	LOT 46	65.	10.	55.8
4	LOT 47	65.	10.	55.0
5	LOT 45	65.	10.	53.4
6	LOT 1	65.	10.	61.8
7	LOT 50	65.	10.	57.3
8	LOT 2	65.	10.	55.2
9	LOT 4	65.	10.	54.1
10	LOT 7	65.	10.	51.4
11	LOT 20	65.	10.	45.1
12	LOT 21	65.	10.	43.7